

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A process for the preparation of an aqueous polymer dispersion comprising reacting at least one olefin in the presence of at least one polymerization catalyst and one emulsifier in an aqueous medium, wherein the polymerization catalyst is produced in an in situ reaction by reacting the ligand compound 2,6-dichloro-para-benzoquinone (Ia) and/or 2,3,6-trichloro-para-benzoquinone (Ib)

with a phosphine compound PR_3' , where R' is hydrogen, $\text{C}_1\text{-C}_{12}\text{-alkyl}$, $\text{C}_3\text{-C}_{12}\text{-cycloalkyl}$, $\text{C}_7\text{-C}_{15}\text{-aralkyl}$ or $\text{C}_6\text{-C}_{14}\text{-aryl}$,

or with a diphosphine compound $\text{R}_2'\text{P-G-PR}_2'$, where R' has the same meanings as in the phosphine compounds PR_3' and G is a divalent radical, ~~such as $\text{C}_4\text{-C}_{12}\text{-alkylene}$, $\text{C}_3\text{-C}_{12}\text{-cycloalkylene}$, $\text{C}_7\text{-C}_{15}\text{-aralkylene}$ or $\text{C}_6\text{-C}_{14}\text{-arylene}$,~~

and with a metal compound of the formula $\text{M}(\text{L}^2)_2$ or $\text{M}(\text{L}^2)_2(\text{L}^1)_z$,

where:

M is a transition metal of groups 7 to 10 of the Periodic Table of the Elements,

L^1 [[are]] is selected from the group consisting of phosphanes $(\text{R}^1)_x\text{PH}_{3-x}$ [[or]] and amines $(\text{R}^1)_x\text{NH}_{3-x}$ having identical or different radicals R^1 , diamines, ethers $(\text{R}^1)_2\text{O}$, water, alcohols $(\text{R}^1)\text{OH}$, pyridine, pyridine derivatives of the formula $\text{C}_5\text{H}_{5-x}(\text{R}^1)_x\text{N}$, carbon monoxide, $\text{C}_1\text{-C}_{12}\text{-alkylnitriles}$, $\text{C}_6\text{-C}_{14}\text{-arylnitriles}$ [[or]] and ethylenically unsaturated double bond systems, where x is an integer from 0 to 3,

R^1 is hydrogen or $\text{C}_1\text{-C}_{20}\text{-alkyl}$, which in turn may be substituted by $\text{O}(\text{C}_1\text{-C}_6\text{-alkyl})$ or $\text{N}(\text{C}_1\text{-C}_6\text{-alkyl})_2$, or is $\text{C}_3\text{-C}_{12}\text{-cycloalkyl}$, $\text{C}_7\text{-C}_{15}\text{-aralkyl}$ or $\text{C}_6\text{-C}_{14}\text{-aryl}$,

L^2 [[are]] is selected from the group consisting of halide ions, $R^2_xNH_{3-x}$,
where x is an integer from 0 to 3 and R^2 is C₁-C₁₂-alkyl, ~~and furthermore~~
C₁-C₆-alkyl anions, allyl anions, benzyl anions [[or]] and aryl anions,
where L^1 and L^2 may be linked to one another by one or more covalent
bonds,
z is from 0 to 4,

and the polymerization of the at least one olefin is effected in an aqueous medium which
comprises at least 50% by volume of water.

Claim 2 (Original): The process according to claim 1, wherein the polymerization is
effected under the conditions of an aqueous miniemulsion polymerization.

Claim 3 (Previously Presented): The process according to claim 1, wherein the
polymerization is effected in the presence of an anionic emulsifier.

Claim 4 (Previously Presented): The process according to claim 1, wherein the
polymerization is effected in the presence of ethylene.

Claim 5 (Original): The process according to claim 4, wherein, in addition to
ethylene, at least one further olefin which is selected from the group consisting of propylene,
1-butene, 1-hexene, 1-octene, norbornene and styrene is used for the polymerization.

Claim 6 (Original): The process according to claim 4, wherein exclusively ethylene is
used for the polymerization.

Claim 7 (New): The process according to claim 1, wherein G is C₁-C₁₂-alkylene, C₃-C₁₂-cycloalkylene, C₇-C₁₅-aralkylene or C₆-C₁₄-arylene.

Claim 8 (New): The process according to claim 1, wherein ligand compound Ia is used to produce the polymerization catalyst.

Claim 9 (New): The process according to claim 1, wherein ligand compound Ib is used to produce the polymerization catalyst.

Claim 10 (New): The process according to claim 1, wherein ligand compounds Ia and Ib are used to produce the polymerization catalyst.

Claim 11 (New): The process according to claim 1, wherein the phosphine compound is used to produce the polymerization catalyst and comprises triphenylphosphine.

Claim 12 (New): The process according to claim 1, wherein L¹ is present during the production of the polymerization catalyst and comprises tetramethylethylene diamine.

Claim 13 (New): The process according to claim 1, wherein the metal compound comprises Ni(COD)₂, wherein COD means 1,5-cyclooctadienyl.

Claim 14 (New): The process according to claim 1, wherein the metal compound comprises Ni(CH₃)₂(TMEDA), wherein TMEDA means tetramethylethylene diamine.

Claim 15 (New): The process according to claim 6, wherein the polyethylene so formed has less than 40 branches per 1,000 carbon atoms thereof, determined by ^1H -NMR and ^{13}C -NMR spectroscopy.

Claim 16 (New): The process according to claim 6, wherein the polyethylene so formed has less than 20 branches per 1,000 carbon atoms thereof, determined by ^1H -NMR and ^{13}C -NMR spectroscopy.

Claim 17 (New): The process according to claim 6, wherein the polyethylene so formed has less than 10 branches per 1,000 carbon atoms thereof, determined by ^1H -NMR and ^{13}C -NMR spectroscopy.

Claim 18 (New): The process according to claim 1, wherein the aqueous polymer dispersion has a solids content that is higher than one obtained using 2,3,5,6-tetrachloro-para-benzoquinone as the ligand compound .